

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **10-067694**

(43)Date of publication of application : **10.03.1998**

(51)Int.Cl.

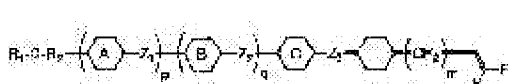
(21)Application number : **08-242697**

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(22)Date of filing : **26.08.1996**

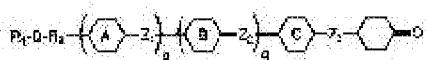
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(54) LIQUID CRYSTAL COMPOUND, LIQUID CRYSTAL COMPOSITION AND LIQUID CRYSTAL DISPLAY ELEMENT



(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a new liquid crystal compound capable of manifesting a high elastic constant ratio, low viscosity, a wide nematic phase temperature range, high chemical stability, proper refractive index anisotropy and dielectric constant anisotropy, containing one end comprising a fluorine-substituted vinyl and the other end composed of a branched alkyl, etc.



SOLUTION: This compound is shown by formula I [R1 is H, F, etc.; R2 is a covalent bond, a 1-8C α,ω -alkylene, etc.; Q is a group of the formula: -CX1H- (X1 is F or Cl), etc.; rings A, B and C are each a (halogen-substituted) 1,4-cyclohexylene, etc.; Z1 to Z3 are each a covalent bond, -CH2CH2-, etc.; X is H or F; (p) and (q) are each 0 or 1; (m) is 0-5] such as



4'-(2-cyclopropylethyl)-4-(2,2-difluoroethenyl)bicyclohexane. The compound of formula I in the case in which (m) is 0 and X is F is

obtained by subjecting a compound of formula II to Wittig reaction to give a compound of formula III and reacting the compound with sodium chlorodifluoroacetate in the presence of triphenylphosphine.